Test Report
Stability of Mix

Project Name	1. Improvement of roads and drain at kogilu layout main road and cross road in ward no 05 byatarayanapura sub division 2. Improvement of roads and drain at kattigenahalli kuvempunagara cross road in ward no 05 byatarayanapura sub division 3. Improvement of drain at dwarakanagara srirama temple road in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at kattigenahalli surrounding area in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at nirantara layout in ward no 05 byatarayanapura sub division 6. Improvement of drain and asphalting to road at agrahara layout harihara temple surrounding area in ward no 05 byatarayanapura sub division
Client	Executive Engineer Project Division Yelahanka Zone
Job No	MCTPL/BBMP/Project Division Yelahanka Zone /PMC/2017-2018/QR/P-8/1
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri A Chennareddy
Test Method	Specification for Road & Bridge Works, MORT&H, Revision V.
Location	Bay
Sample No	1
Date	24-Apr-2018

Sl. No.	Description	Unit	Test 1	Requirements as per MORT&H
1	Marshal Stability	KN	9.65	9 KN (min)
2	Marshal Flow	mm	3.4	2 – 5 mm
3	Percent of Air Voids in mix	%	4.35	3-5..
4	Percent of Voids in Mineral Aggregates filled with Bitumen	%	70	65 – 75 %
5	Density	g/cc	2.22	2.22 g/cc

Note:

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For Mecadez Core Technologies Private Limited

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

Test Report
Stability of Mix

Project Name	1. Improvement of roads and drain at kogilu layout main road and cross road in ward no 05 byatarayanapura sub division 2. Improvement of roads and drain at kattigenahalli kuvempunagara cross road in ward no 05 byatarayanapura sub division 3. Improvement of drain at dwarakanagara srirama temple road in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at kattigenahalli surrounding area in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at nirantara layout in ward no 05 byatarayanapura sub division 6. Improvement of drain and asphalting to road at agrahara layout harihara temple surrounding area in ward no 05 byatarayanapura sub division
Client	Executive Engineer Project Division Yelahanka Zone
Job No	MCTPL/BBMP/Project Division Yelahanka Zone /PMC/2017-2018/QR/P-
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri A Chennareddy
Test Method	Specification for Road & Bridge Works, MORT&H, Revision V
Location	Bay
Sample No	2
Date	24-Apr-2018

Sl. No.	Description	Unit	Test 1	Requirements as per MORT&H
1	Marshal Stability	KN	9.5	9 KN (min)
2	Marshal Flow	mm	3.45	2 – 5 mm
3	Percent of Air Voids in mix	%	4.76	3-5
4	Percent of Voids in Mineral Aggregates filled with Bitumen	%	72	65 – 75 %
5	Density	g/cc	2.21	2.22 g/cc

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Yelahanka Zone
Bangalore

Test Report
Stability of Mix

Project Name	1. Improvement of roads and drain at kogilu layout main road and cross road in ward no 05 byatarayanapura sub division 2. Improvement of roads and drain at kattigenahalli kuvempunagara cross road in ward no 05 byatarayanapura sub division 3. Improvement of drain at dwarakanagara srirama temple road in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at kattigenahalli surrounding area in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at nirantara layout in ward no 05 byatarayanapura sub division 6. Improvement of drain and asphalting to road at agrahara layout harihara temple surrounding area in ward no 05 byatarayanapura sub division
Client	Executive Engineer Project Division Yelahanka Zone
Job No	MCTPL/BBMP/Project Division Yelahanka Zone /PMC/2017-2018/QR/P-8/1
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri A Chennareddy
Test Method	Specification for Road & Bridge Works, MORT&H, Revision V.
Location	Bay
Sample No	3
Date	24-Apr-2018

Sl. No.	Description	Unit	Test 1	Requirements as per MORT&H
1	Marshal Stability	KN	9.55	9 KN (min)
2	Marshal Flow	mm	3.5	2 – 5 mm
3	Percent of Air Voids in mix	%	4.6	3-5
4	Percent of Voids in Mineral Aggregates filled with Bitumen	%	74	65 – 75 %
5	Density	g/cc	2.22	2.22 g/cc

Note:

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

Test Report
Binder Content and Mix Gradation

Project Name	1. Improvement of roads and drain at kogilu layout main road and cross road in ward no 05 byatarayanapura sub division 2. Improvement of roads and drain at kattigenahalli kuvempunagara cross road in ward no 05 byatarayanapura sub division 3. Improvement of drain at dwarakanagara srirama temple road in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at kattigenahalli surrounding area in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at nirantara layout in ward no 05 byatarayanapura sub division 6. Improvement of drain and asphalting to road at gorabare layout horibara temple surrounding area in
Client	Executive Engineer Project Division Yelahanka Zone
Job No	MCTPL/BBMP/Project Division Yelahanka Zone /PMC/2017-2018/QR/P-8/1
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri A Chennareddy
Test Method	Specification for Road & Bridge Works, MORT&H, Revision V.
Location	Bay
Sample No	1
Date	24-Apr-2018

Sl. No.	Description	Unit	Computation	Test Result
1	Weight of Empty bowl before Extraction (E)	gm	Eb	1080
2	Weight of bowl + Sample before extraction (w_{sb})	gm	w_{sb}	1772
3	Weight of Sample taken for the test (S_b)	gm	$S_b = w_{sb} - Eb$	692
4	Weight of bowl + Sample after extraction (w_{sa})	gm	w_{sa}	1739
5	Weight of Sample after extraction (i.e. washed aggregates) (S_a)	gm	$S_a = w_{sa} - Eb$	659
6	Weight of Filter paper before extraction (F_b)	gm	F_b	2
7	Weight of Filter paper after extraction (F_a)	gm	F_a	4
8	Weight of filler on filter paper (F_d)	gm	$F_d = F_b - F_a$	2
9	Weight of Bitumen without considering Filter paper (W_b)	gm	W_b	33
10	Weight of the Bitumen with considering Filter paper (W_a)	gm	$W_a = w_b - F_d$	31
11	Percentage of the Bitumen (i.e. Binder Content) ($\%_b$)	(%)	$W_a / SbX100$	4.48

Sl. No.	I.S. Sieve size (mm)	Weight Retained (gm)	Percentage of weight Retained (%)	Cumulative Percentage of weight retained (%)	Cumulative % of Passing		Remarks
					Test Result	Gradation Limits as per MORT&H	
1	37.50	0.00	0.00	0.00	100.00	100.00	Gradation satisfies the MORT&H Specification for Dense graded biyuminous macadam
2	26.50	173.00	4.33	4.33	95.68	90-100	
3	19.00	852.00	21.30	25.63	74.38	71-95	
4	13.20	732.00	18.30	43.93	56.08	56-80	
5	4.75	672.00	16.80	60.73	39.28	38-54	
6	2.36	359.00	8.98	69.70	30.30	28-42	
7	0.30	752.00	18.80	88.50	11.50	(7-21)	
8	0.08	273.00	6.83	95.33	4.68	(2-8)	

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

Test Report
Binder Content and Mix Gradation

Project Name	1. Improvement of roads and drain at kogilu layout main road and cross road in ward no 05 byatarayanapura sub division 2. Improvement of roads and drain at kattigenahalli kuvempunagara cross road in ward no 05 byatarayanapura sub division 3. Improvement of drain at dwarakanagara srirama temple road in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at kattigenahalli surrounding area in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at nirantara layout in ward no 05 byatarayanapura sub division 6. Improvement of drain and asphalting to road at sarabara layout haribara temple surrounding area in
Client	Executive Engineer Project Division Yelahanka Zone
Job No	MCTPL/BBMP/Project Division Yelahanka Zone /PMC/2017-2018/QR/P-8/1
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri A Chennareddy
Test Method	Specification for Road & Bridge Works, MORT&H, Revision V
Location	Bay
Sample No	1
Date	24-Apr-2018

Sl. No.	Description	Unit	Computation	Test Result
1	Weight of Empty bowl before Extraction (E)	gm	Eb	1080
2	Weight of bowl + Sample before extraction (w_b)	gm	w_{sb}	1772
3	Weight of Sample taken for the test (S_b)	gm	$S_b = w_{sb} - Eb$	692
4	Weight of bowl + Sample after extraction (w_a)	gm	w_{sa}	1739
5	Weight of Sample after extraction (i.e. washed aggregates) (S_a)	gm	$S_a = w_{sa} - Eb$	659
6	Weight of Filter paper before extraction (F_b)	gm	F_b	2
7	Weight of Filter paper after extraction (F_a)	gm	F_a	4
8	Weight of filler on filter paper (F_d)	gm	$F_d = F_b - F_a$	2
9	Weight of Bitumen without considering Filter paper (W_b)	gm	W_b	33
10	Weight of the Bitumen with considering Filter paper (W_a)	gm	$W_a = w_b - F_d$	31
11	Percentage of the Bitumen (i.e. Binder Content) ($\%_b$)	(%)	$W_a / SbX100$	4.48

Sl. No.	I.S. Sieve size (mm)	Weight Retained (gm)	Percentage of weight Retained (%)	Cumulative Percentage of weight retained (%)	Cumulative % of Passing		Remarks
					Test Result	Gradation Limits as per MORT&H	
1	37.50	0.00	0.00	0.00	100.00	100.00	Gradation satisfies the MORT&H Specification for Dense graded biyumnous macadam
2	26.50	173.00	4.33	4.33	95.68	90-100	
3	19.00	852.00	21.30	25.63	74.38	71-95	
4	13.20	732.00	18.30	43.93	56.08	56-80	
5	4.75	672.00	16.80	60.73	39.28	38-54	
6	2.36	359.00	8.98	69.70	30.30	28-42	
7	0.30	752.00	18.80	88.50	11.50	(7-21)	
8	0.08	273.00	6.83	95.33	4.68	(2-8)	

For Mecadez Core Technologies Private Limited

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

Test Report
Binder Content and Mix Gradation

Project Name	1. Improvement of roads and drain at kogilu layout main road and cross road in ward no 05 byatarayanapura sub division 2. Improvement of roads and drain at kattigenahalli kuvempunagara cross road in ward no 05 byatarayanapura sub division 3. Improvement of drain at dwarakanagara srirama temple road in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at kattigenahalli surrounding area in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at nirantara layout in ward no 05 byatarayanapura sub division 6. Improvement of drain and asphalting to road at agrahara layout haribara temple surrounding area in
Client	Executive Engineer Project Division Yelahanka Zone
Job No	MCTPL/BBMP/Project Division Yelahanka Zone /PMC/2017-2018/QR/P-8/1
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri A Chennareddy
Test Method	Specification for Road & Bridge Works, MORT&H, Revision V.
Location	Bay
Sample No	2
Date	24-Apr-2018

Sl. No.	Description	Unit	Computation	Test Result
1	Weight of Empty bowl before Extraction (E)	gm	Eb	1080
2	Weight of bowl + Sample before extraction (w_s)	gm	w_{sb}	1777
3	Weight of Sample taken for the test (S_b)	gm	$S_b = w_{sb} - Eb$	697
4	Weight of bowl + Sample after extraction (w_s)	gm	w_{sa}	1744
5	Weight of Sample after extraction (i.e. washed aggregates) (S_a)	gm	$S_a = w_{sa} - Eb$	664
6	Weight of Filter paper before extraction (F_b)	gm	F_b	2
7	Weight of Filter paper after extraction (F_a)	gm	F_a	4
8	Weight of filler on filter paper (F_d)	gm	$F_d = F_b - F_a$	2
9	Weight of Bitumen without considering Filter paper (W_b)	gm	W_b	33
10	Weight of the Bitumen with considering Filter paper (W_a)	gm	$W_a = w_b - F_d$	31
11	Percentage of the Bitumen (i.e. Binder Content) ($\%_b$)	(%)	$W_a / SbX100$	4.45

Sl. No.	I.S. Sieve size (mm)	Weight Retained (gm)	Percentage of weight Retained (%)	Cumulative Percentage of weight retained (%)	Cumulative % of Passing		Remarks
					Test Result	Gradation Limits as per MORT&H	
1	37.50	0.00	0.00	0.00	100.00	100.00	Gradation satisfies the MORT&H Specification for Dense graded biyuminous macadam
2	26.50	173.00	4.33	4.33	95.68	90-100	
3	19.00	852.00	21.30	25.63	74.38	71-95	
4	13.20	732.00	18.30	43.93	56.08	56-80	
5	4.75	672.00	16.80	60.73	39.28	38-54	
6	2.36	359.00	8.98	69.70	30.30	28-42	
7	0.30	752.00	18.80	88.50	11.50	(7-21)	
8	0.08	273.00	6.83	95.33	4.68	(2-8)	

For Mecadez Core Technologies Private Limited

Authorised Signature

Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

Test Report
Rate of Spread of Prime Coat

Project Name
1. Improvement of roads and drain at kogilu layout main road and cross road in ward no 05 byatarayanapura sub division
2. Improvement of roads and drain at kattigenahalli kuvempunagara cross road in ward no 05 byatarayanapura sub division
3. Improvement of drain at dwarakanagara srirama temple road in ward no 05 byatarayanapura sub division
4. Improvement of roads and drain at kattigenahalli surrounding area in ward no 05 byatarayanapura sub division
5. Improvement of roads and drain at nirantara layout in ward no 05 byatarayanapura sub division
6. Improvement of drain and asphalting to road at agrahara layout harihara temple surrounding area in ward no 05 byatarayanapura sub division

Client Executive Engineer Project Division Yelahanka Zone
Job No MCTPL/BBMP/Project Division Yelahanka Zone /PMC/2017-2018/QR/P-8/1

Mix Type Wet Mix Macadam
Contractor Sri A Chennareddy
Location At Site
Material Bitumen
Sample No 1
Date 15-Apr-2018

Sl. No.	Determination	Unit	Test No 1 Longitudinal Distribution		
1	Size of Plate (mxn)	m^2	0.2x0.2	0.2x0.2	0.2x0.2
2	Area of the Plate (a)	m^2	0.04	0.04	0.04
3	Initial weight of the empty Plate (b)	kg	1.642	1.643	1.643
4	Final weight of plate after application of Tack Coat (c)	kg	1.658	1.655	1.651
5	Weight of Prime coat/ Tack Coat (d = c-b)	kg	0.016	0.012	0.008
6	Rate of spread (d/a)	kg / m^2	0.400	0.300	0.200
7	Average	kg / m^2	0.300		
8	Specified Limit	kg / m^2	Not less than 0.6 kg / m^2		

Results: Rate of Spread of Prime Coat / Tack Coat is: 0.300 kg / m2

Note:
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Asst. Executive Engineer
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Yelahanka
Bangalore

Test Report
Rate of Spread of Prime Coat

Project Name
1. Improvement of roads and drain at kogilu layout main road and cross road in ward no 05 byatarayanapura sub division
2. Improvement of roads and drain at kattigenahalli kuvempunagara cross road in ward no 05 byatarayanapura sub division
3. Improvement of drain at dwarakanagara srirama temple road in ward no 05 byatarayanapura sub division
4. Improvement of roads and drain at kattigenahalli surrounding area in ward no 05 byatarayanapura sub division
5. Improvement of roads and drain at nirantara layout in ward no 05 byatarayanapura sub division
6. Improvement of drain and asphalting to road at agrahara layout harihara temple surrounding area in ward no 05 byatarayanapura sub division

Client Executive Engineer Project Division Yelahanka Zone
Job No MCTPL/BBMP/Project Division Yelahanka Zone /PMC/2017-2018/QR/P-8/1

Mix Type Wet Mix Macadam
Contractor Sri A Chennareddy
Location At Site
Material Bitumen
Sample No 2
Date 16-Apr-2018

Sl. No.	Determination	Unit	Test No 1 Longitudinal Distribution		
1	Size of Plate (mxn)	m^2	0.2x0.2	0.2x0.2	0.2x0.2
2	Area of the Plate (a)	m^2	0.04	0.04	0.04
3	Initial weight of the empty Plate (b)	kg	1.641	1.641	1.641
4	Final weight of plate after application of Tack Coat (c)	kg	1.657	1.654	1.65
5	Weight of Prime coat/ Tack Coat (d = c-b)	kg	0.016	0.013	0.009
6	Rate of spread (d/a)	kg / m^2	0.4	0.325	0.225
7	Average	kg / m^2	0.317		
8	Specified Limit	kg / m^2	Not less than 0.6 kg / m^2		

Results: Rate of Spread of Prime Coat / Tack Coat is: 0.317 kg / m2

Note:
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